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"I pledge my honor that I have abided by the Stevens Honor System" -cchaffin 10510591

# Graphs Assignment Report

I approached this assignment by first thinking about the kind of data that I would be handling (CSV files) and how I could interact with/extract what I needed from it. Once I had determined what must be accessible to get the correct information for the output, I began to dive into the code. I mapped out what variables I wanted based on the example output and what piece of the data I would access. I declared them appropriately and set their necessary values if needed. Overall, the logic of this process was rather straightforward as there were only a few steps to be taken to get what I needed from the file. This required opening and reading the file as well as tracking the triangles/part of them. After reading through and tracking each edge/self-loops/trusted vs distrusted I adjusted the values of the variables as seen fit.

Following the adjustment to the trust/distrust variables I wanted to loop through all nodes and edges to find out which sets were triads. After obtaining this information I was able to work and obtain values for the rest of the necessary data. In my program I keep track of how many trusted edges there are and add a value to the appropriate variable. Probability calculations were a must as it was required based on the given terminal output. I needed to calculate the given probabilities of both outcomes happening.

This process seemed daunting at first but after taking a step back and realizing a better way to approach it, in a more - compartmentalized way, it was easy to step into the code blocks. Something that was very time consuming for a minimal result was trying to find a better way to format the terminal output because the example output looked perfectly aligned. However, I was unable to find a way to set a specific column that a character should start on. That would be an interesting programming exercise to try and write one….anyway. I thought this was an interesting and engaging programming assignment for the fact that I was able to take logic and theory out of my head and into code.

In regards to the expected and actual distributions, they most definitely differ. However, as seen in your example output this is normal and due to random assignment. The expected values are what is based on pure math, pure randomness whereas the actual values are what is present in the network.